

IBM System Storage



DCS9550 and DCS9900 42U and 45U Rack Installation and Configuration Guide

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Preface

What is in this Guide

This guide provides installation and maintenance information that is specific to the IBM System Storage DCS9550 and DCS9900 42U/45U racks.

Who should use this Guide

This guide should be used by service representative to install or repair the DCS9550 and DCS9900 42U/45U racks.

Getting information, Help, and Service

If you need help, service, or technical assistance or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you. This section contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your IBM System Storage DCS9550 or DCS9900 product, and whom to call for service, if it is necessary.

Support Information

For online support information for your IBM System Storage DCS9550 or DCS9900 product, visit the following web site:

www.ibm.com/support

For telephone support information, in the United States, contact IBM at 1-800-IBM-SERV (426-7378).

In other countries, visit the following web site for support telephone numbers:

www.ibm.com/planetwide/

Before You Call

Before you call, make sure that you have taken these steps to try to solve the problem yourself:

- Check all cables on your hardware to make sure that they are connected properly.
- Check the power switches to make sure that the system is turned on.
- Use the troubleshooting information in your system documentation and use the diagnostic tools that come with your system.

Using the Documentation

Information about the DCS9550 or DCS9900 products is available on a documentation CD that comes with your product. You can also access documents using the IBM Publications Center:

<http://www.ibm.com/shop/publications/order>

International Standards

This product complies with the applicable Information Technology (IT) standards set forth by EMC and product safety for world wide shipment.

Qualified Personnel

The personnel qualified to use this device are referred to within this document as follows:

- **Service Person:** Someone with the appropriate and necessary technical training and experience to be aware of hazards to which they may be exposed in performing a task and of measures to minimize the risks to that person or other persons.
- **User/Operator:** Any person authorized to handle/operate the product other than a *Service Person*.

Delivery and Subsequent Transportation of the Equipment

You must prepare your environment to accept the new product based on the installation planning information provided, with assistance from an IBM Installation Planning Representative (IPR) or IBM authorized service provider. In anticipation of the equipment delivery, prepare the final installation site in advance so that professional movers or riggers can transport the equipment to the final installation site within the computer room. If for some reason, this is not possible at the time of delivery, you must make arrangements to have professional movers or riggers return to finish the transportation at a later date. Only professional movers or riggers should transport the equipment.

The IBM authorized service provider can only perform minimal frame repositioning within the computer room, as needed, to perform required service actions. You are also responsible for using professional movers or riggers when you relocate or dispose of equipment.

When relocating the DCS9900 rack with 1269-3S1 draws installed, the hard drives installed in the drawers must be removed to avoid a side-to-side tip-over hazard.



DANGER

Heavy equipment—personal injury or equipment damage might result if mishandled. (D006)

Rack System Precautions

Elevated Operating Ambient Temperature

The rack design should take into consideration the maximum operating ambient temperature for the unit.

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the system in an environment compatible with the system's maximum rated ambient temperature.

Reduced Air Flow

Installation of the system in a rack should be such that the amount of air flow required for safe operation of the system is not compromised.

Mechanical Loading

Mounting of the system in the rack should be such that a hazardous condition does not occur due to uneven mechanical loading. The rack design should incorporate stabilizing features suitable to prevent the rack from tipping during installation.

When loading a rack with the enclosures, fill the rack from the bottom up and empty from the top down.

The rack design should incorporate stabilizing features suitable to prevent the rack from tipping or being pushed over in normal use.

Circuit Overloading

Consideration should be given to the connection of the system to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring.

The rack should have a safe electrical distribution system. It must provide overcurrent protection for the unit and must not be overloaded by the total number of units installed in the rack. Consideration of the units nameplate rating should be used when addressing these concerns.

Reliable Earthing

Reliable earthing of rack-mounted systems should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power distribution units).

The electrical distribution system must provide a reliable earth for each unit and the rack.

The design of the electrical distribution system must take into consideration the total earth leakage current from all the power supplies in all the units. The rack will require labeling with "HIGH LEAKAGE CURRENT. Earth connection essential before connecting supply".

Rack Relocation

Observe the following precautions when you need to relocate your rack:

- Before you add or remove drawers, always lower the leveling feet and install the anti-tip plates, or have the rack bolted to the floor.
- Always install drawers at the bottom of the rack first.
- Always remove drawers from the top of the rack first.
- Always install the heaviest drawers on the bottom of the rack.
- Never push on the sides of the rack.
- When relocating the DCS9900 rack with 1269-3S1 draws installed, the hard drives installed in the drawers must be removed to avoid a side-to-side tip-over hazard.

Taiwan Contact Information

Taiwan Contact Information

IBM Taiwan Product Service Contact Info:
IBM Taiwan Corporation
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台北市松仁路7號3樓
電話：0800-016-888

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You can also mail your comments by using the Readers' Comments Form in the back of this manual or direct your mail to:

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Installing the Rack

This chapter contains the procedures for installing the rack and preparing it for operation.

1.1 Site Pre-Installation Inspection



Given the weight and size of the rack, it is possible that the rack may tip over while moving.

The rack must be removed from the shipping crate using a minimum of 2 people. The rack may not be tipped more than 10 degrees, either from a level surface or rolling down an incline (ramp).

Before a rack can be installed, a site inspection needs to be done and questions need to be answered to assure a successful installation.

Questions to answer:

1. Where will the crate be dropped off?
2. Are there obstacles in the way at drop off point, such as steps and slope, complicating rack removal from crate?
3. Can the rack be wheeled to destination without obstacles such as low door hangs and low building components?
4. Is a sufficient power source installed and appropriate for customers desired configuration?
5. Are temperature, BTU cooling, and humidity of the room appropriate?
6. Are the floor tiles rated properly to hold the rack weight?

If any of these questions are not fully addressed, precautionary measures might be needed at time of product deployment to create a successful installation.

1.2 Handling Verification

The procedure described in this section applies to both 42U and 45U racks.

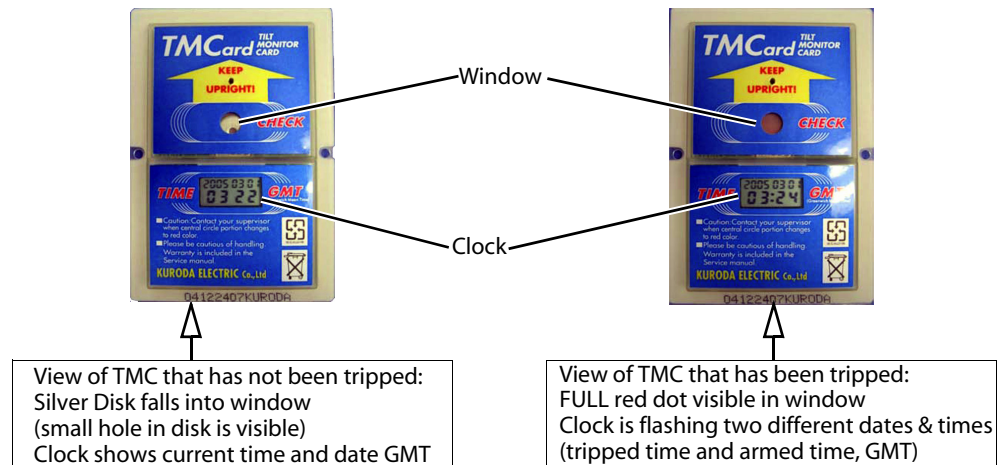
1. Visually inspect the crate for signs of external damage. If you detect any problems, follow the instructions given in the “Physical Transit Damage and TMC Incident Data Sheet” (which is attached to the crate) to report damage.
2. There are two tilt monitor cards (TMC) attached to the left and front of the crate to indicate if the crate has been tipped over in transit (Figure 1).

On both TMCs, verify that the silver disks are still visible in the windows (Figure 2). If a tripped TMC is observed (red dot in window), follow the instructions given in the “Physical Transit Damage and TMC Incident Data Sheet” to report damage.

Figure 1. Tilt Monitor Cards on Crate



Figure 2. Views of TMC (Normal & Tripped)



1.3 Unpacking

The procedure described in this section applies to both 42U and 45U racks.

CAUTION: When transporting the crate, insert forklift from the two sides of crate only (Figure 3). To prevent the pallet jack from breaking the crate base, only insert forklift 3/4 way in (Figure 4).

Figure 3. Using Forklift on Crate



Figure 4. Inserting Forklift



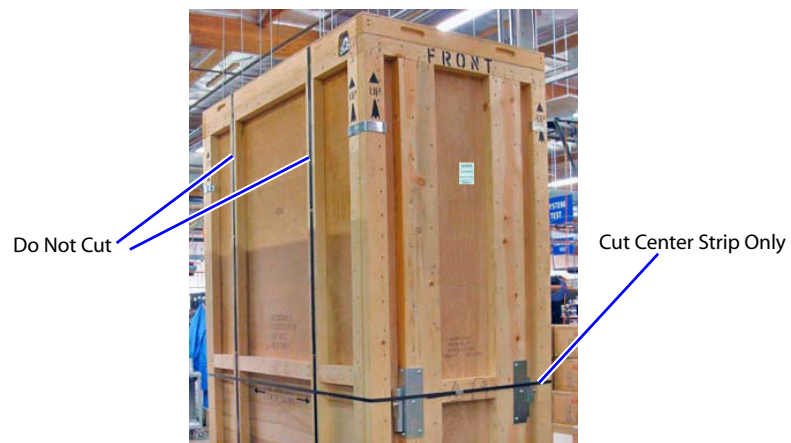
NOTE: Make sure you have enough space in front of the crate. The crate door will be used as a ramp for rolling out the rack.

Tools Required:

- Cutter/scissors
- 3/4" Wrench
- 3/16" Allen wrench

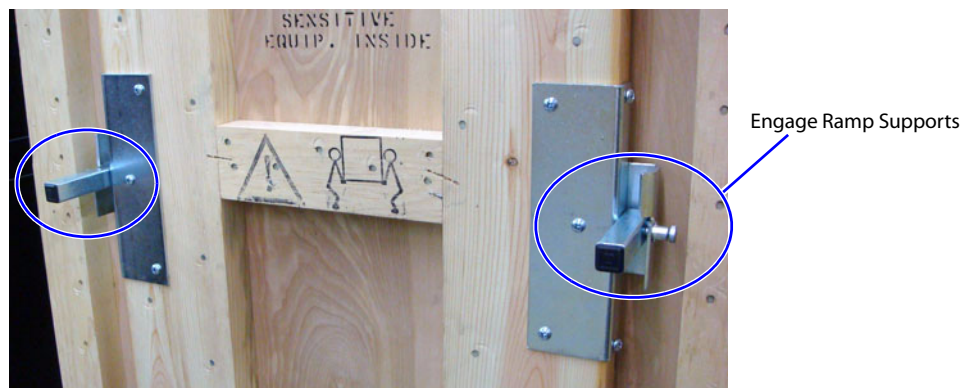
1. Cut the center fastening strip (Figure 5).

Figure 5. Opening the Shipping Crate



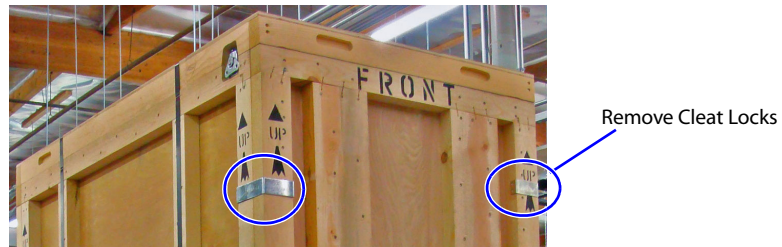
2. Engage the two ramp supports on front panel—pull the pin out, turn the swivel leg up and release pin to lock (Figure 6).

Figure 6. Engage Ramp Supports



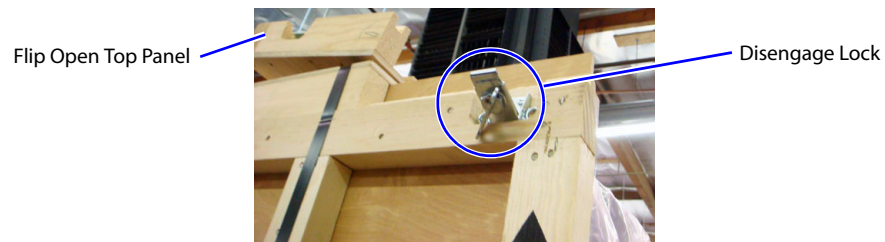
3. Remove the 2 metal cleat locks near top of panel (Figure 7).

Figure 7. Remove Metal Cleat Locks



4. Disengage the two link locks at top on both sides—lift up the flap and turn counter-clockwise. Then flip open the top panel (Figure 8).

Figure 8. Disengage Link Locks and Open Top Panel



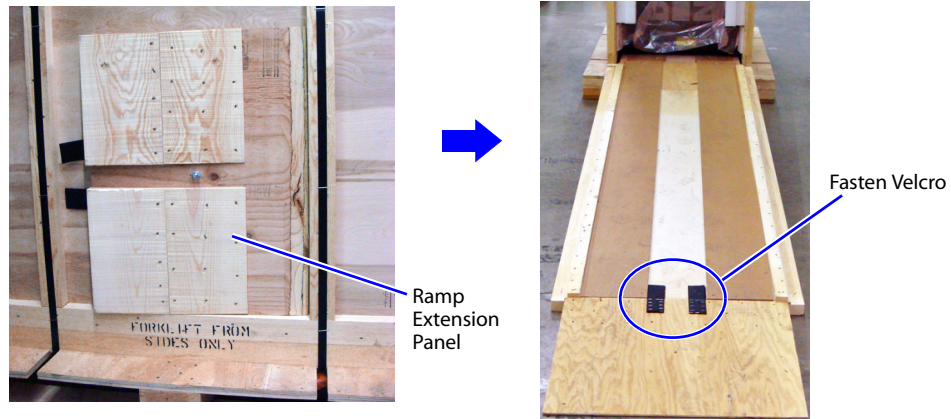
5. Lift and pull out the front panel (Figure 9). Lay the panel on the floor and align the holes in ramp top with bolts on base.

Figure 9. Set Front Panel as Ramp



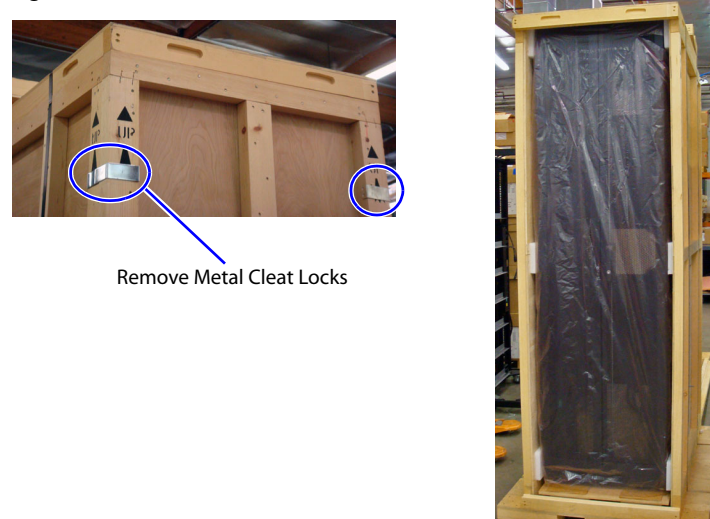
6. Remove the ramp extension panel from left side of crate (Figure 10). Place the extension at end of ramp, making sure the two velcro fasteners are secure.

Figure 10. Set Up Ramp Extension



7. Remove the 2 metal cleat locks from rear panel (Figure 11). Remove and set panel aside.

Figure 11. Remove Metal Cleat Locks



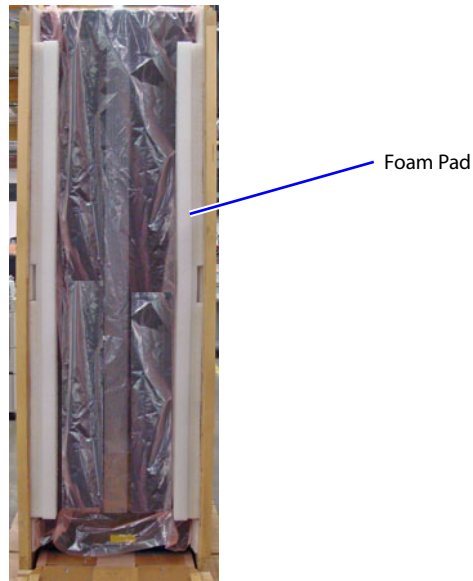
8. Verify that the 4 leveling nuts/feet at the bottom corners of rack are raised to the maximum height so they will not scratch the floor when the rack is moved (Figure 12). Use the wrench to adjust if necessary.

Figure 12. Leveling Nut/Foot Position



9. Remove the 2 foam pads at front (Figure 13).

Figure 13. Remove Foam Pads



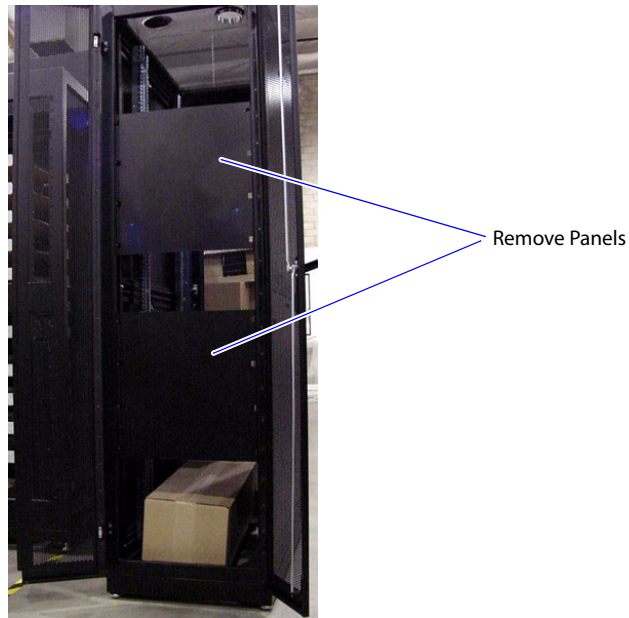
10. With the help of your partner, push the rack out from the rear side while the other person steer the rack down the ramp from front (Figure 14).
11. Once the rack is rolled onto the floor, remove the plastic cover. Then reassemble the crate.

Figure 14. Pushing Out the Rack



12. Remove the stiffener panels that are attached to the rack during shipment (Figure 15).

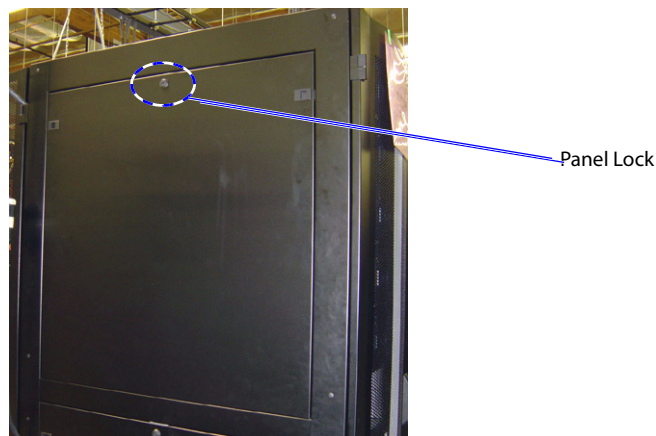
Figure 15. Remove Stiffener Panels



13. Verify that the locks on the side panels are engaged (Figure 16).

CAUTION: The side panels can potentially be a hazard when they become unlatched. It is highly recommended that you lock the side panels if they are installed.

Figure 16. Locks on Side Panels



1.4 Positioning the Rack

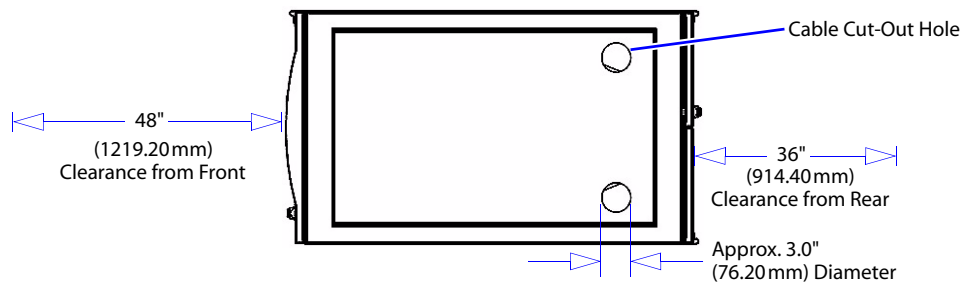
1.4.1 42U Racks

For 42U racks populated with 16-bay enclosures, the recommended service clearances are 48" (1219.20mm) from the front and 36" (914.40mm) from the rear of the rack (Figure 17). No service clearance is required on the side of the rack. The height clearance is 84" (2133.6mm).

NOTE: The service clearance is only one of the factors used to determine floor layout. Cooling is another major factor that must be considered for your specific site/facility.

There are cut-out holes, approximately 3.0" (76.20mm) in diameter, on the top panel for passing cables into the rack from above (Figure 17).

Figure 17. Top View of Rack



If you plan to pass the cables into the rack from underneath the floor, the recommended cut-out is 6" x 6" in the rear of the tile on which the rack is positioned. Figure 18 illustrates the location for the cut-out. Figure 19 shows the location of the castors at the bottom of rack.

Figure 18. Location of Cable Cut-Out in Floor

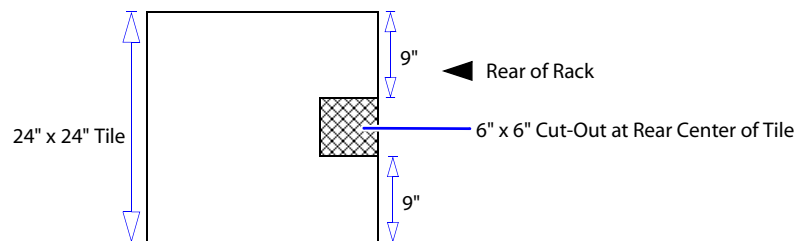
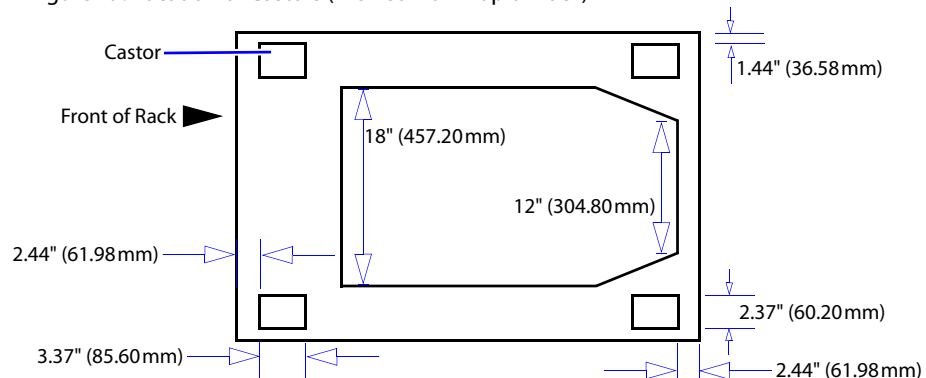


Figure 19. Location of Castors (Viewed from Top of Rack)



1.4.2 45U Racks

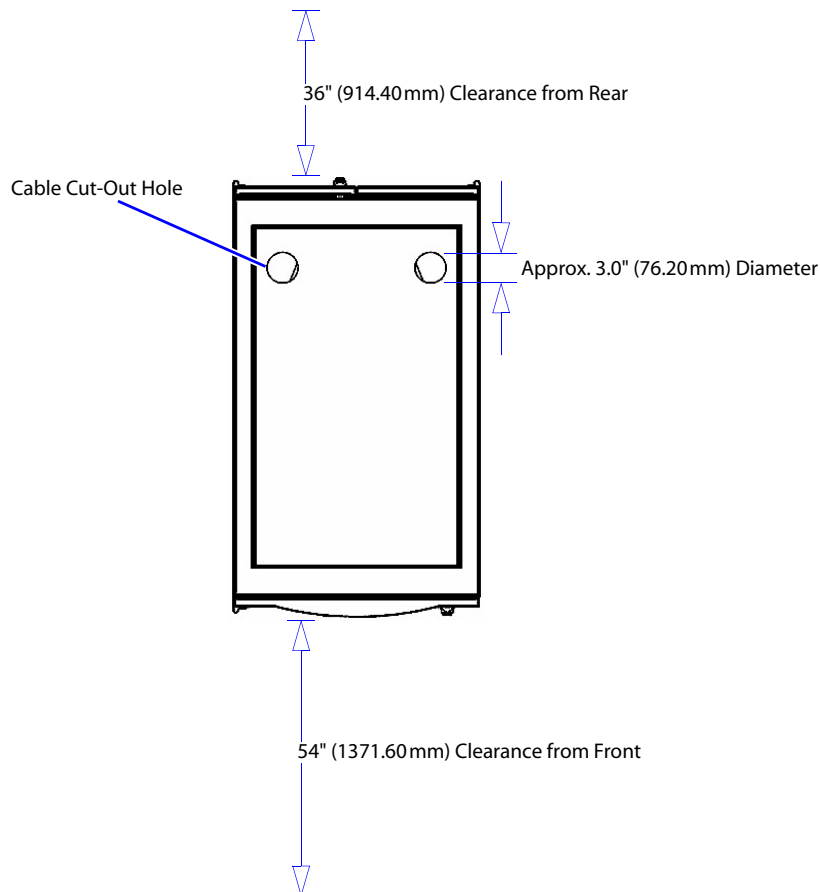
For 45U racks, the recommended service clearance from the rear is 36" (914.40mm). No service clearance is required on the side of the rack. The height clearance is 89" (2260.6mm).

From the front, 54" (1371.60mm) service clearance is required when using 48-bay or 60-bay enclosures (Figure 20).

NOTE: The service clearance is only one of the factors used to determine floor layout. Cooling is another major factor that must be considered for your specific site/facility.

There are cut-out holes, approximately 3.0" (76.20mm) in diameter, on the top panel for passing cables into the rack from above (Figure 20).

Figure 20. Top View of Rack



If you plan to pass the cables into the rack from underneath the floor, the recommended cut-out is 6" × 6" in the rear of the tile on which the rack is positioned. [Figure 21](#) illustrates the location for the cut-out. [Figure 22](#) shows the location of the castors at the bottom of rack.

Figure 21. Location of Cable Cut-Out in Floor

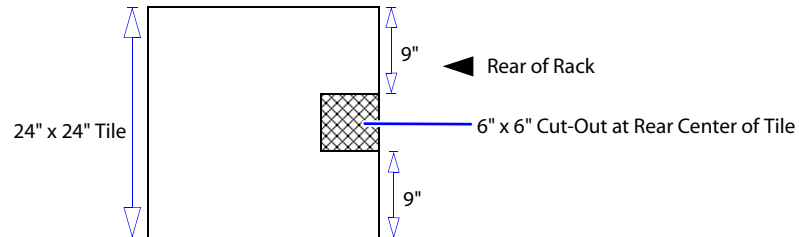
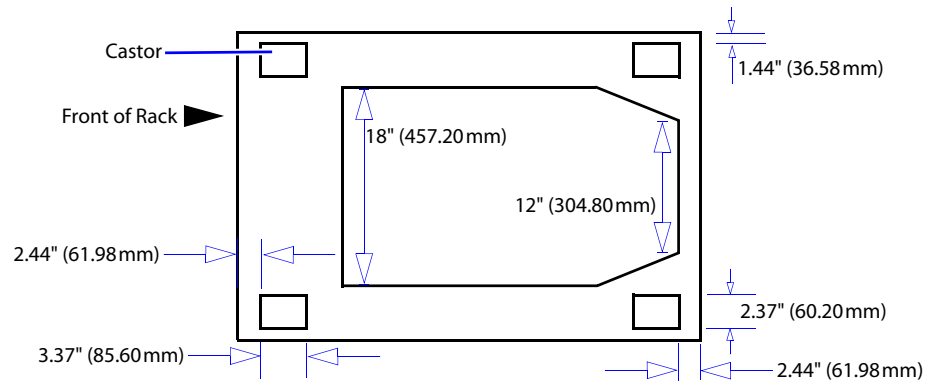


Figure 22. Location of Castors (Viewed from Top of Rack)



1.5 Leveling the Rack

NOTE: If you are joining multiple racks, skip this section and proceed to Section 1.6.

1.5.1 Leveling the DCS9550 Rack

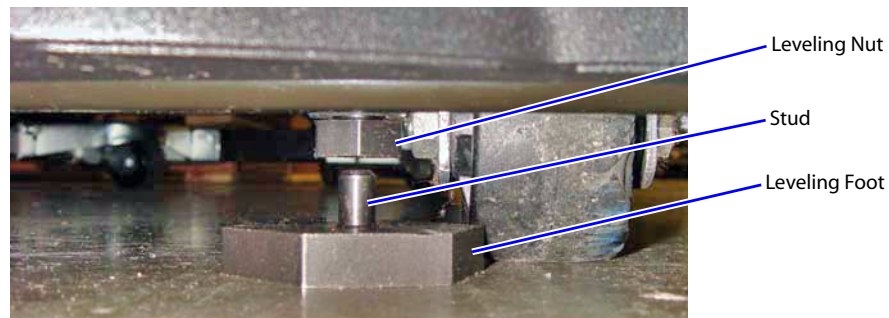
Tools Required:

- 3/4" Wrench
- Level

Once the rack is placed at the desired location, it must be properly leveled.

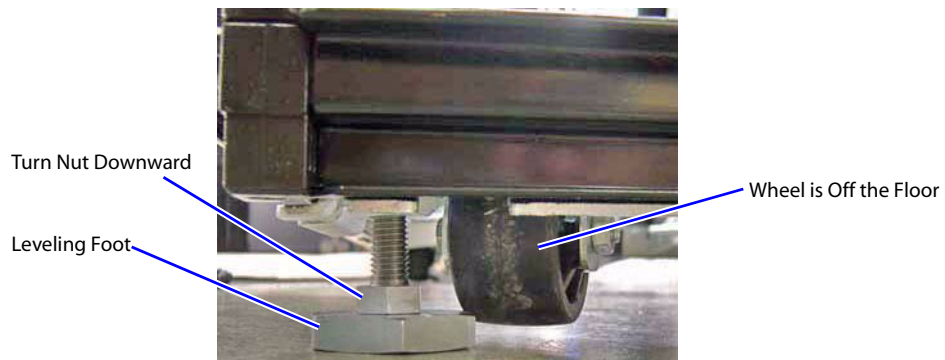
1. Place the 4 leveling feet, included in the accessory kit, under the leveling nut at the corners of the rack (Figure 23).

Figure 23. Leveling the DCS9550 Rack (1)



2. Using the 3/4" wrench, turn each leveling nut downward until the stud is fully inserted **and** the wheel next to the leveling foot is completely off the floor (Figure 24).

Figure 24. Leveling the DCS9550 Rack (2)



3. Checking with a level, adjust the leveling nut as needed until the rack is level. Note that all caster wheels must be completely off the floor so only the leveling feet are supporting the rack.

1.5.2 Leveling the DCS9900 Rack

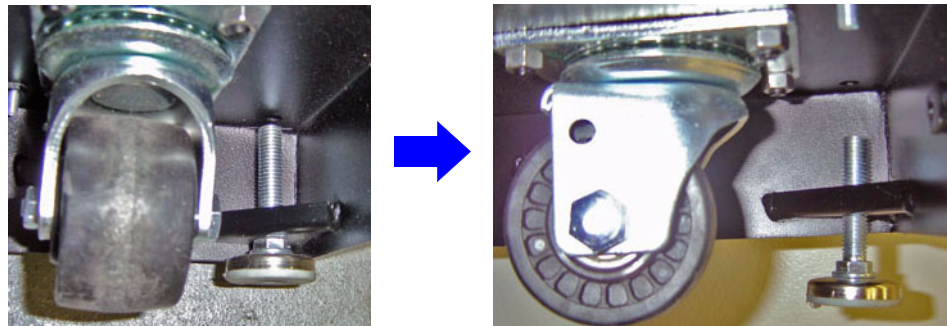
Tools Required:

- 3/4" Wrench
- Level

Once the rack is placed at the desired location, it must be properly leveled. There are four leveling feet at the corners of the rack, next to the wheels.

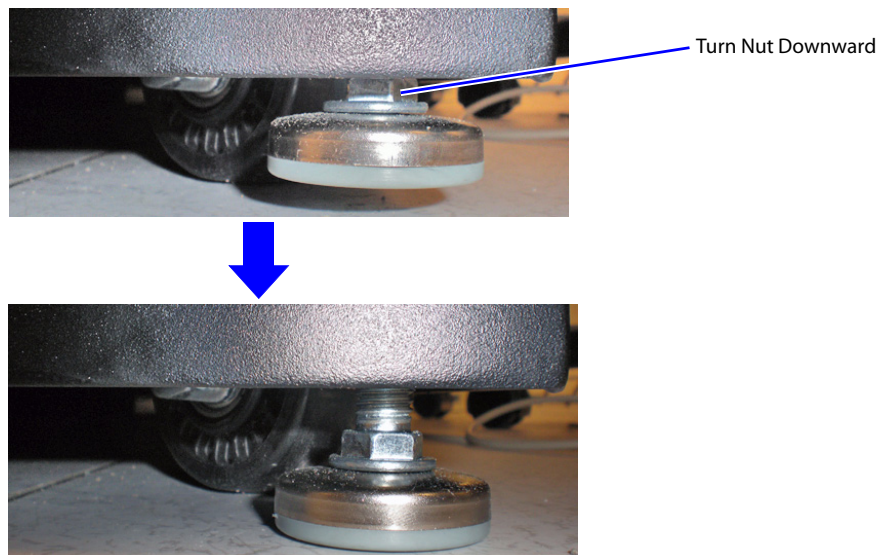
1. Rotate each leveling foot by hand with a quick “spinning wheel” motion to lower the foot (Figure 25). **Note: A slow rotation or pulling down on the thread does not engage the thread.**

Figure 25. Leveling Foot on DCS9900 Rack



2. Using the wrench, turn each leveling nut downward until the wheel next to the leveling foot is completely off the floor (Figure 26).
3. Checking with a level, adjust the leveling nut as needed until the rack is level. Note that all caster wheels must be completely off the floor so only the leveling feet are supporting the rack.

Figure 26. Leveling the DCS9900 Rack



1.6 Joining Multiple Racks

Follow these steps to join two or more racks together side-by-side.

Parts List:

- | | | |
|----------------|--|---------|
| • 11-00154-016 | Bolt, 1/4-20×1.0", HEX, PSZ, RoHS | [Qty 4] |
| • 13-R0039-001 | Washer, ID.315, OD.74, THK.06, PSZ, RoHS | [Qty 8] |
| • 12-R0019-001 | Nut, Wing, 1/4-20, HEX, PSZ, RoHS | [Qty 4] |

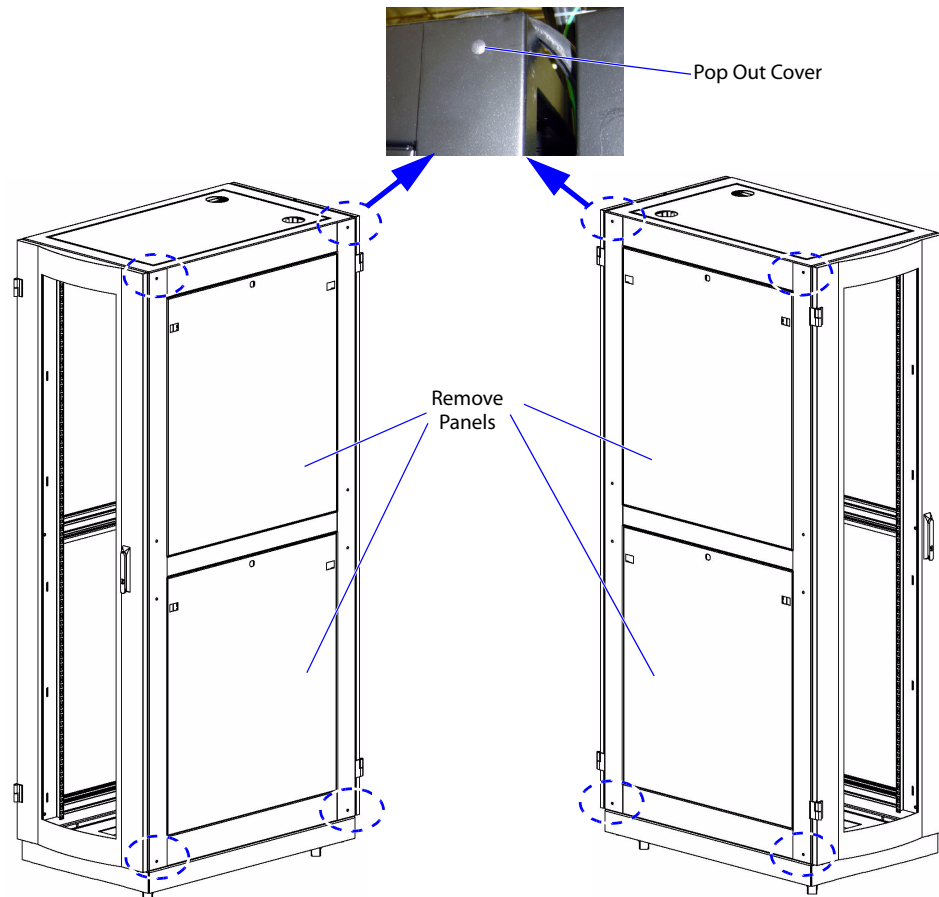
Tools Required:

- 7/16" socket wrench or 7/16" open-end wrench
- #2 Phillips screwdriver
- Step-ladder

Procedure:

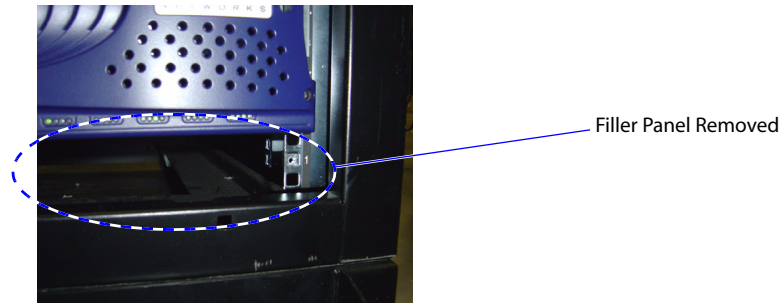
1. Remove the two “inside” (sides to be joined) side panels from racks—disengage the locks, then release the latches and pull the panel out and up (Figure 27). Store the side panels for future use if desired.

Figure 27. Removing the Side Panels and Hole Covers



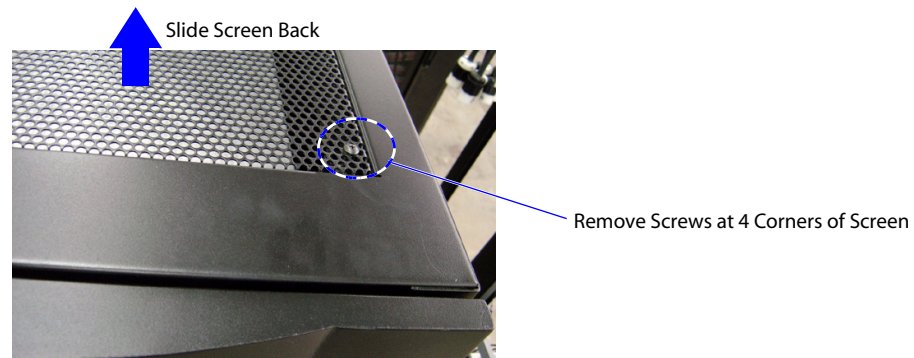
2. On both racks, push out the 8 hole covers in each corner of the exterior frame (Figure 27).
3. Using the screwdriver, remove the filler panel on bottom of rack (Figure 28).

Figure 28. Remove Filler Panel



4. Align the racks side by side with frames touching.
5. Stand on the step-ladder. Remove all four screws from each top screen (Figure 29). Then slide the screens back for easier access to holes at top front.

Figure 29. Slide Back Top Screen



6. Insert one washer on each bolt.
7. Insert each bolt with washer through both racks, from the inside of one rack out and into the adjacent rack.
8. Then secure each bolt with one washer and wing nut. Tighten until snug using the 7/16" wrench.
9. Replace the top screens and screws.
10. Replace the filler panels at bottom of racks.

1.7 Attaching Anti-Tip Plates

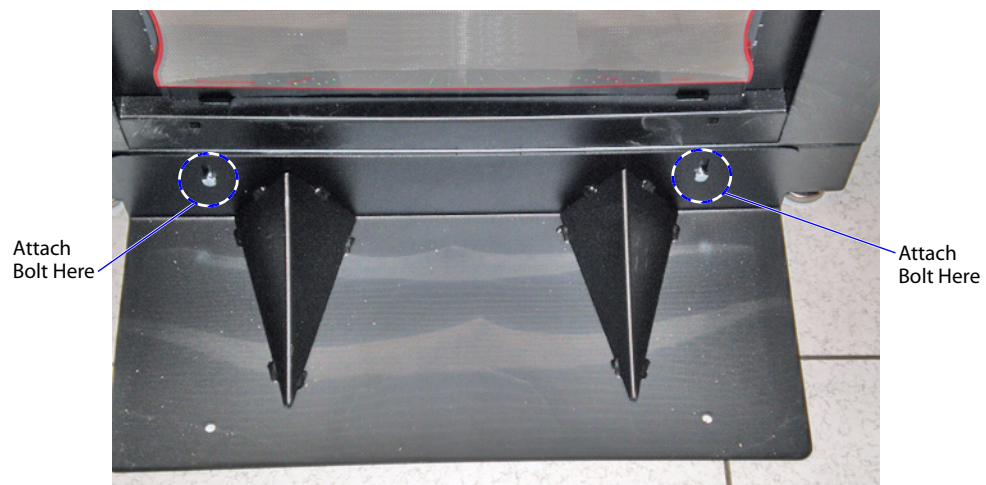
CAUTION: Anti-tip plates must be firmly attached to the bottom of the rack to prevent the rack from tipping over when the drawers are pulled out of the rack.

Tools Required:

- 7/16" wrench

Place the anti-tip plate at bottom front of rack, aligning the holes (Figure 30). Using the wrench, attach 2 bolts to fasten plate to rack.

Figure 30. Attaching Anti-Tip Plates to Front of DCS9900 Rack

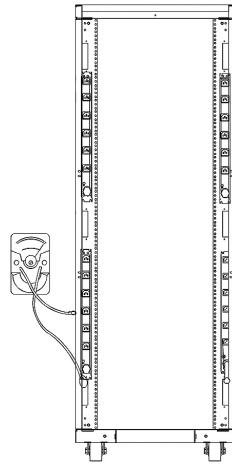


1.8 Powering On the Rack

1. Perform the following grounding checks:

- a) With the external power cord connected to the system unit, check for 0.1 ohm or less resistance between the ground plug on the external power cord plug and the metal frame (Figure 31).

Figure 31. Grounding Check on an DCS9550 Rack



- b) Using the appropriate probe, check for 0.1 ohm or less resistance between the metal frame and the grounding pin on each of the power outlets on each power distribution bus.

2. Verify that your ac power source is ready:

CAUTION: Do not touch the receptacle or the receptacle face plate with anything other than your test probes before you have met the requirements in this step.

- i) Turn off the branch circuit breaker for the ac power outlet that the rack will plug into. Attach a “Do Not Operate” tag (S229-0237) to the circuit breaker switch.
Note: All measurements are made with the receptacle face plate in the normal installed position.
- ii) Some receptacles are enclosed in metal housings. For this type of receptacle, do the following:
 - Check for less than 1 volt from the receptacle case to any grounded metal structure in the building, such as a raised-floor metal structure, water pipe, building steel, and similar structure.
 - Check for less than 1 volt from the receptacle ground pin to a grounded point in the building.
Note: If the receptacle case or face plate is painted, be sure that the probe tip penetrates the paint and makes good electrical contact with the metal.
 - Check the resistance from the ground pin of the receptacle to the receptacle case. Check the resistance from the ground pin to the building ground. The readings should be less than 1.0 ohm, which indicates the presence of a continuous grounding conductor.

- iii) If any of the three checks that you made in Step (ii) above are not correct, remove the power from the branch circuit and make the wiring corrections; then check the receptacle again.

Note: Do not use a digital multimeter to measure grounding resistance in the following steps.

- iv) Check for infinite resistance between the ground pin of the receptacle and each of the phase pins. This is a check for a wiring short to ground or a wiring reversal.
- v) Check for infinite resistance between the phase pins. This is a check for a wiring short.

CAUTION: If the reading is other than infinity, do not proceed! Make the necessary wiring corrections before continuing. Do not turn on the branch circuit breaker until all the above steps are satisfactorily completed.

- vi) Turn on the branch circuit breaker. Measure for the appropriate voltages between phases. If no voltage is present on the receptacle case or the ground pin, the receptacle is safe to touch.
- vii) With an appropriate meter, verify that the voltage at the ac outlet is correct.
- viii) Verify that the grounding impedance is correct by using the ECOS 1020, 1023, B7106, C7106, or an appropriately approved ground impedance tester.

3. Plug in all the drawer power cords to the PDUs.

4. Connect the power cord of each PDU to your ac power outlets.

For maximum power redundancy, connect the two sets of PDU to two different wall circuits, i.e. connect the left PDU power cords to wall circuit power feed #1 and the right PDU power cords to wall circuit power feed #2.

5. Turn on all switches on each PDU and verify that the 2 power LEDs on each PDU are on.
6. Follow the power on procedures for your drawers.

This chapter provides information on the PDU used with the racks.

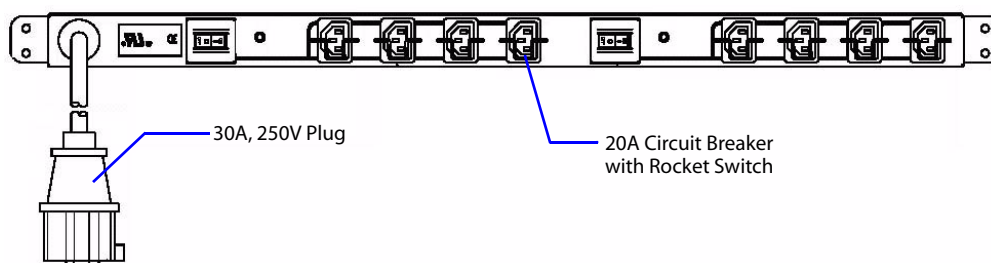
2.1 **Types of Power Distribution Units**

Power is distributed to the enclosures and controllers in the rack by the power distribution units (PDU). PDUs must be installed in pairs. Each DCS9550 rack is configured with 4 PDUs. Each DCS9900 45U rack is configured with 8 PDUs.

Two types of PDU are supported:

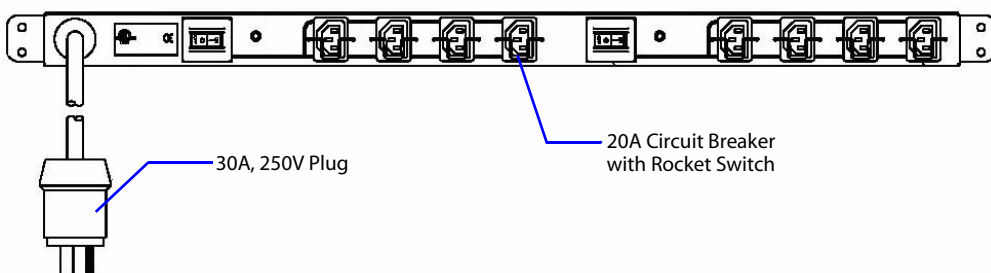
- IEC 309 plug type has 8 × IEC 320-C13, 200-240V receptacles and 2 power switches (Figure 32)

Figure 32. IEC 309 PDU



- NEMA L6-30P plug type has 8 × IEC 320-C13, 200-240V receptacles and 2 power switches (Figure 33)

Figure 33. NEMA L6-30P PDU



2.2 Field Replaceable Units

These PDUs are field replaceable (Figure 34)(Figure 35). The part numbers are:

- 95P5362 DCS9900 PDU (left and right) and left DCS9550 PDU 30A 250V with NEMA L6-30 15' power cord FRU
- 95P6972 Right DCS9550 PDU 30A 250V with NEMA L6-30 15' power cord FRU
- 95P5363 DCS9900 PDU (left and right) and left DCS9550 PDU 30A or 250V IEC 309 Plug and 14-6" power cord FRU
- 95P6973 Right DCS9550 PDU 30A or 250V IEC 309 Plug and 14-6" power cord FRU

Figure 34. PDUs on DCS9550 Racks and DCS9900 42U Rack

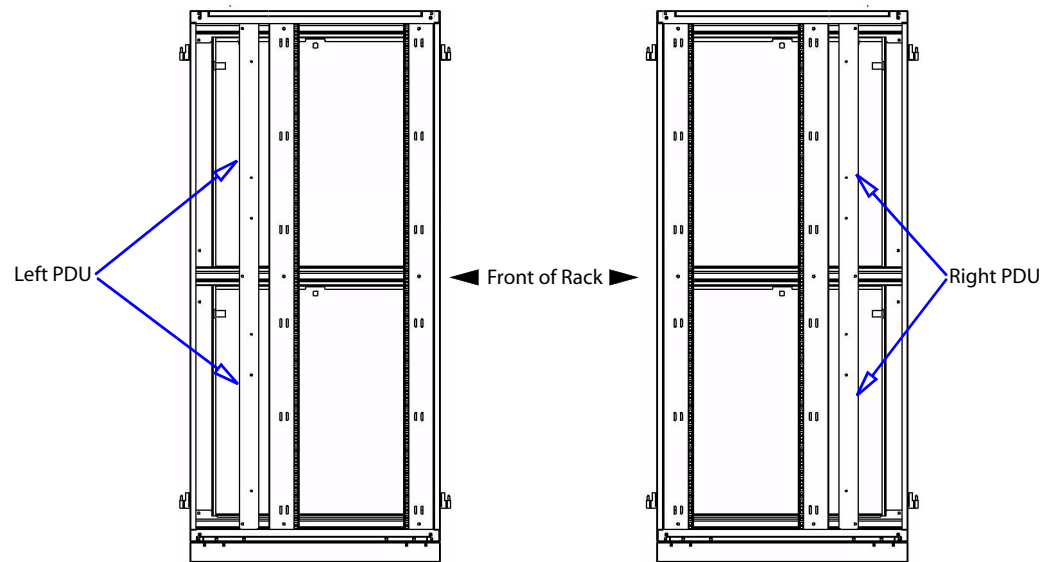
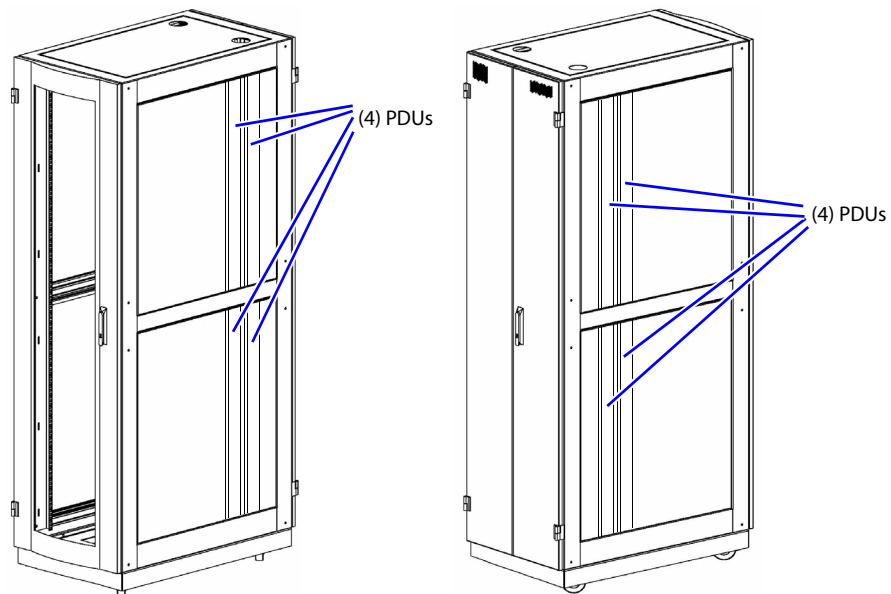


Figure 35. PDU Positions on DCS9900 45U Rack



This chapter provides information on how to replace the PDUs and doors on the racks.

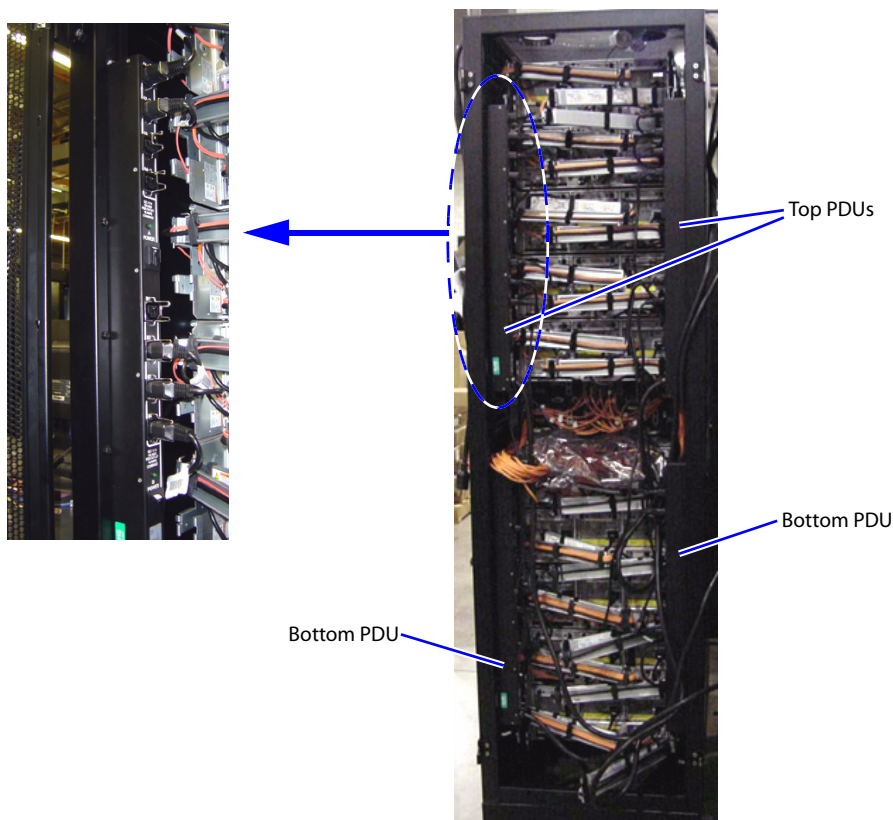
3.1 **Replacing the PDU**

Tools Required:

- 7/16" wrench
- 3/8" wrench
- #2 Phillips screwdriver

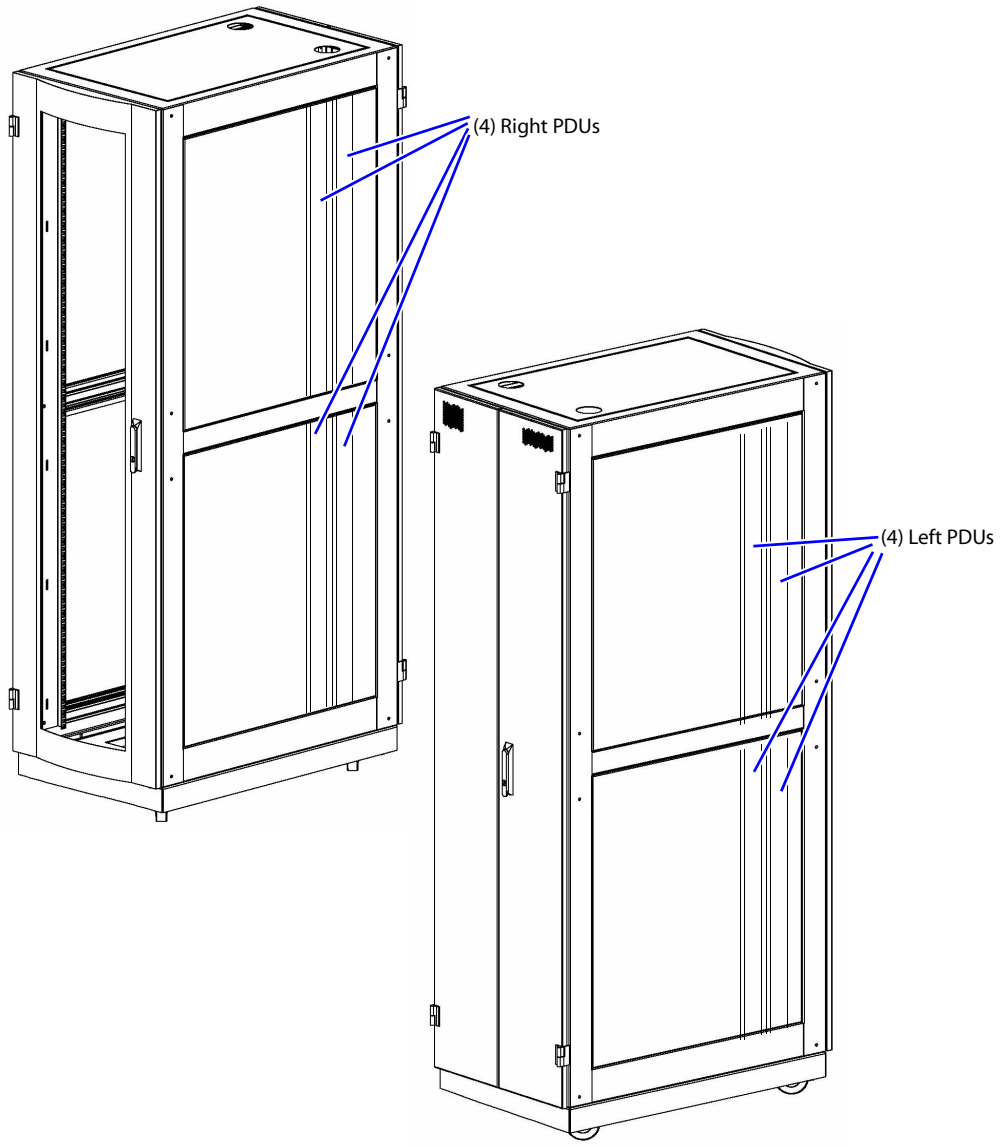
There are 4 PDUs installed in the DCS9550 42U/45U racks and DCS9900 42U rack, two on each side attached to a mounting bracket. [Figure 36](#) illustrates the locations of the PDU in the racks.

Figure 36. PDU Positions on Rear of DCS9550 45U/42U Racks and DCS9900 42U Rack



There are 8 PDUs installed in the DCS9900 45U rack, four on each side attached to two mounting brackets. The side panel(s) must be removed when you need to access the PDUs. [Figure 37](#) illustrates the location of the PDUs in the DCS9900 rack.

Figure 37. PDU Positions on DCS9900 Rack

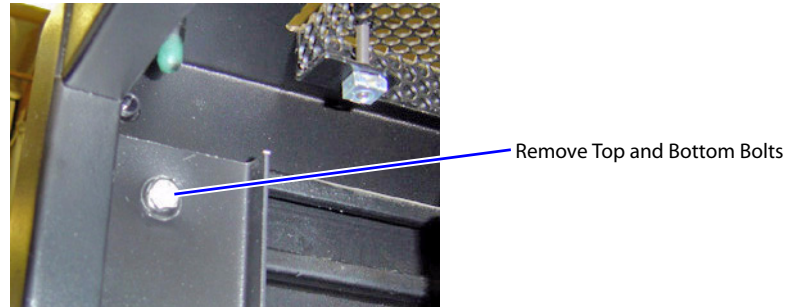


A PDU can be replaced in the field if it is found to be defective. Follow these steps to replace a PDU:

1. Turn off all power switches on the defective PDU and unplug it from the ac power source. For DCS9900 45U rack, remove the side panel to access the PDU.
2. Determine which power supply modules must be turned off to service the defective PDU. Then turn off those modules and unplug their power cords from the defective PDU.

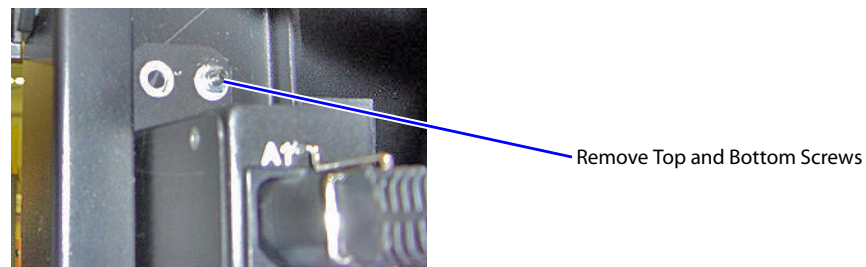
3. Using the 7/16" wrench, remove the top and bottom bolts from the PDU mounting rail (Figure 38). Be careful to support the mounting rail after you have removed the bolts.

Figure 38. Remove Bolts from PDU Mounting Rail



4. Flip over the mounting rail. Using the 3/8" wrench and #2 Phillips screwdriver, remove the 2 screws and nuts to detach the defective PDU from mounting rail (Figure 39).

Figure 39. Remove Screws from PDU



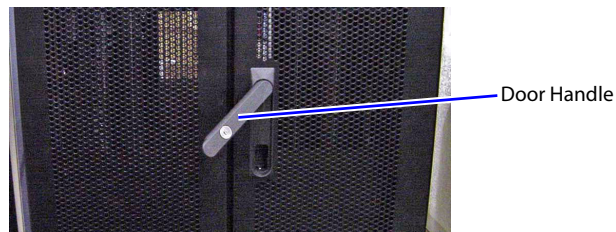
5. Attach the replacement PDU to the mounting rail using the 2 screws and nuts.
6. Attach the mounting rail to rack using the 2 bolts.
7. Connect the power supply modules' power cords to the replacement PDU.
8. Connect the replacement PDU to your ac power outlet.
9. Turn on all switches on the PDU and verify that the 2 power LEDs are on.
10. Turn on the power supply modules.

3.2 Replacing the Doors

To remove a door:

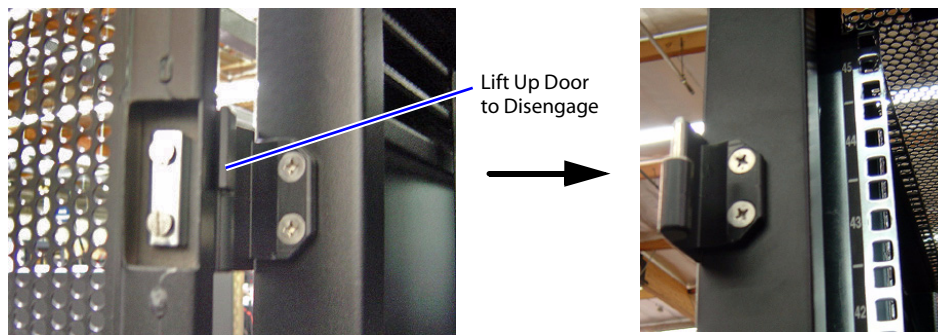
1. Make sure the lock is disengaged. Press the lock button to release the door handle (Figure 40). Turn handle to open door.

Figure 40. Door Handle



2. Lift up to take the door off the hinges (Figure 41).

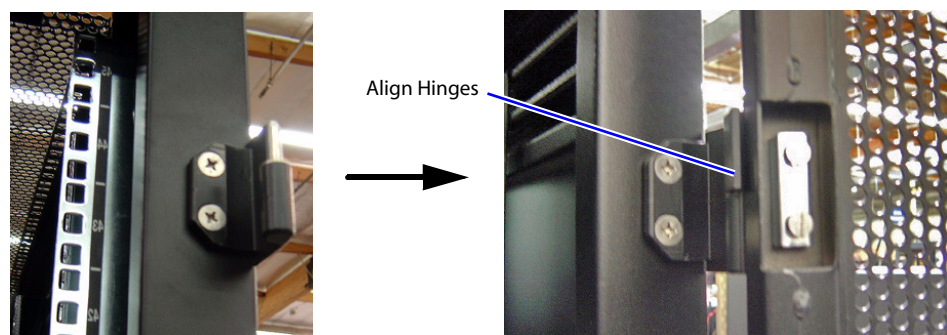
Figure 41. Door Hinge



To install a door:

Hold the door close to rack, aligning the top and bottom hinges (Figure 42). Then place the hinges on door over hinge pins. Make sure both hinges are completely engaged.

Figure 42. Front Door Top Hinge

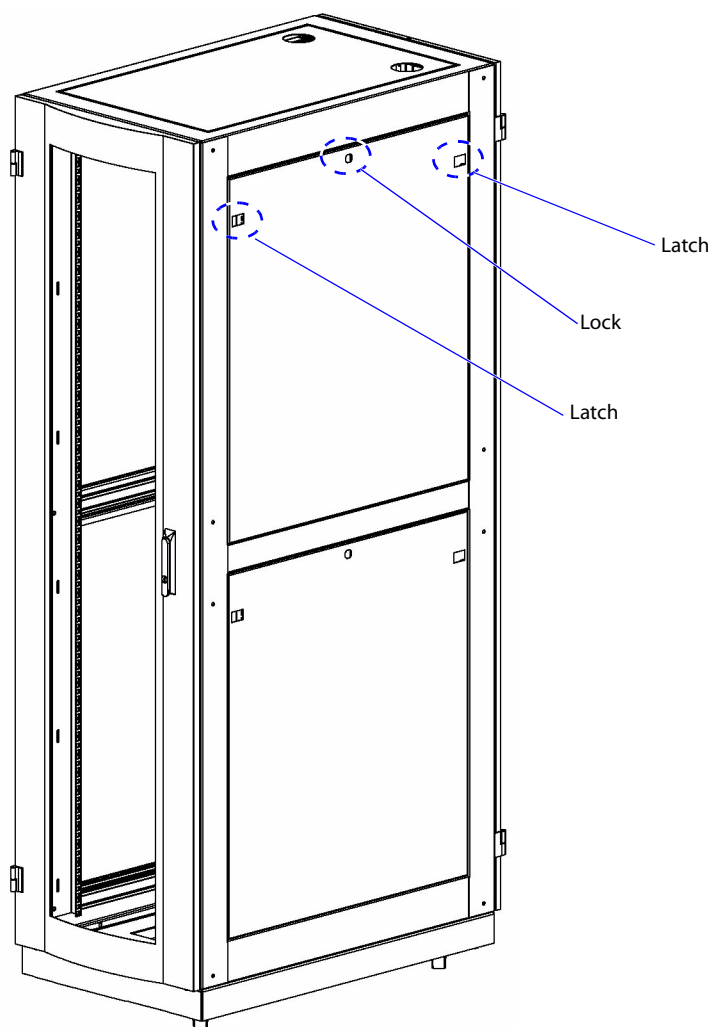


3.3 Replacing the Side Panels

To remove a side panel:

1. Make sure the lock is disengaged.
2. Press to release the two latches simultaneously (Figure 43).
3. Then pull the panel out and up.

Figure 43. Removing a Side Panel

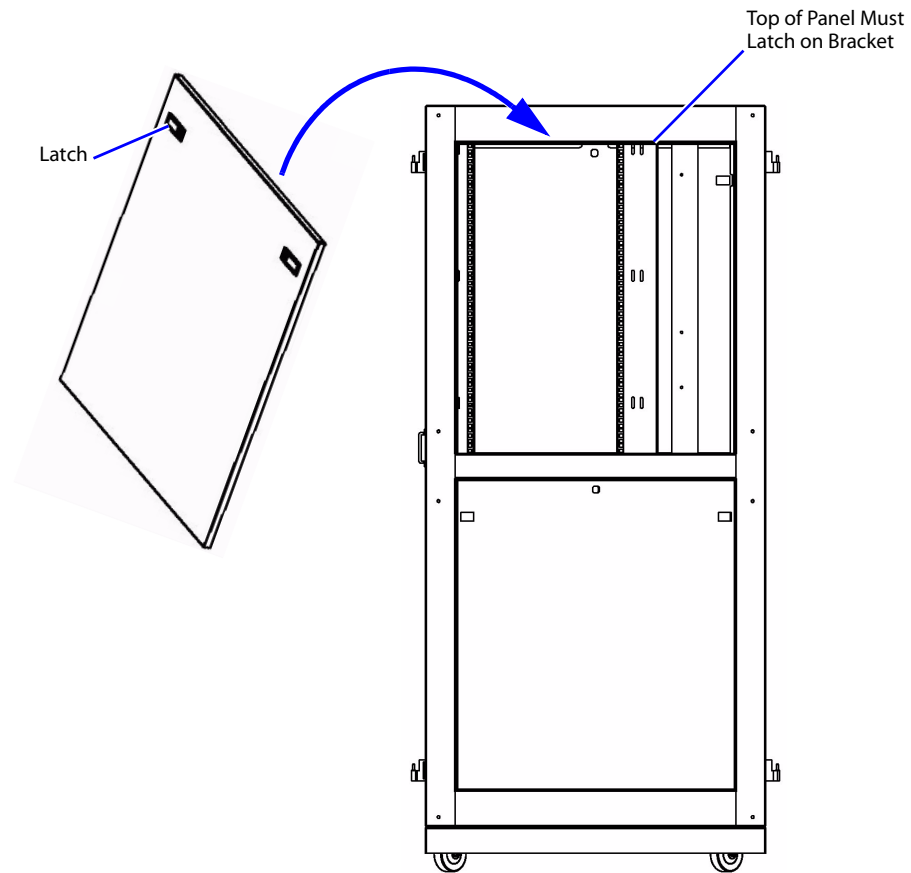


To install a side panel:

1. Hold the panel at an angle and hang it over the bracket at top of frame (Figure 44). Make sure top of panel is latched on both sides.
2. Push the panel towards the rack until the two latches are engaged.

CAUTION: The side panels can potentially be a hazard when they become unlatched. It is highly recommended that you lock the side panels if they are installed.

Figure 44. Installing a Side Panel



3.4 Relocating a Rack

CAUTION: Removing components from the upper positions in the rack cabinet improves rack stability during relocation.

If needed, reduce the weight of the rack cabinet by removing equipment starting at the top of the rack cabinet. After the rack has been relocated, restore the rack cabinet to its original configuration.

NOTE: When relocating the DCS9900 rack with 1269-3S1 drawers installed, the hard drives installed in the drawers must be removed to avoid a side-to-side tip-over hazard.



DANGER

Heavy equipment—personal injury or equipment damage might result if mishandled. (D006)

Follow these steps whenever you relocate a populated rack cabinet within a room or building.

1. Turn off all power to the rack and the system that is installed.
2. Disconnect all PDU power cords from the wall outlets and secure the power cords inside the rack.
3. Make sure that all anti-tip plates are installed.
4. Ensure that the heaviest devices are installed in the bottom of the rack cabinet.
5. Ensure that there are no empty U-levels between devices installed in the rack cabinet below the 25U level.
6. Remove all anti-tip plates.
7. If the rack cabinet you are relocating is part of a suite of rack cabinets, detach the rack cabinet from the suite.
8. Ensure that all devices, shelves, drawers, doors, and cables are secure.
9. Ensure that the four leveling feet are raised to their highest position.
10. Inspect the route that you plan to take when moving the rack to eliminate potential hazards:
 - **Note:** Do not use a ramp inclined at more than 10 degrees.
 - Verify that the route that you choose can support the weight of the loaded rack cabinet. Refer to [Section 4.1](#) on [page 29](#) for the weight of a loaded rack cabinet.

- Verify that all door openings are bigger than the rack. Refer to [Section 4.1](#) on [page 29](#) for the dimensions of rack cabinet.

- 11.** With the help of your partner, carefully roll the rack to the new location.
If a long distance relocation is required, restore the rack cabinet to the configuration as you received it. Pack the rack cabinet in the original packaging material, or equivalent.

Once the rack cabinet is in the new location, do the following:

- 1.** Lower the four leveling feet.
- 2.** Level the rack.
- 3.** Attach the anti-tip plates to the rack cabinet.
- 4.** If previously removed, replace all the drawers and devices to their original rack location.

Product Specifications and Parts Information

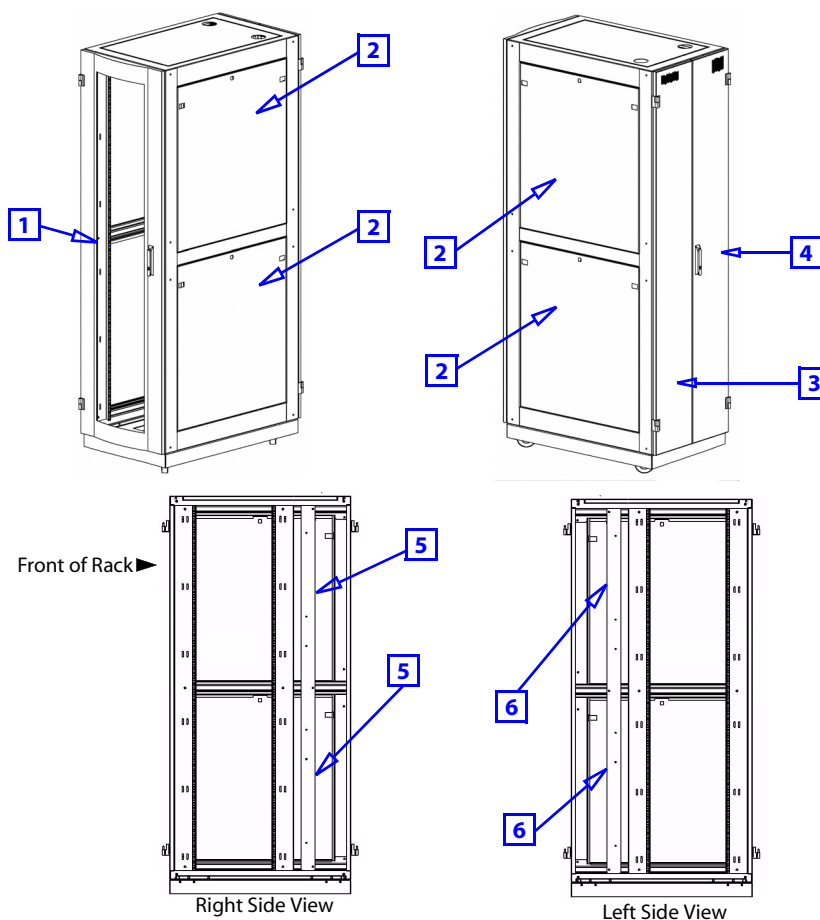
This chapter provides the list of field replaceable unit (FRU) part numbers and product specifications.

4.1 Product Specifications

42U Wide Rack Specifications		
Height:		84" (2133.6 mm)
Depth:	With front and rear doors installed	44" (1117.6mm)
	Less front and rear doors	42" (1066.8mm)
Width:	With side panels installed	28" (711.2mm)
Weight:	Empty rack	380 lbs (172.73 kg)
	Max. weight with ten 16-bay enclosures and controller couplet	1216 lbs (552.73kg)
	Max. weight with ten 16-bay enclosures only	1108 lbs (503.64 kg)
	Max. weight with five 48-bay enclosures and controller couplet	1305 lbs (593.18 kg)
	Max. weight with five 48-bay enclosures only	1197 lbs (544.09 kg)

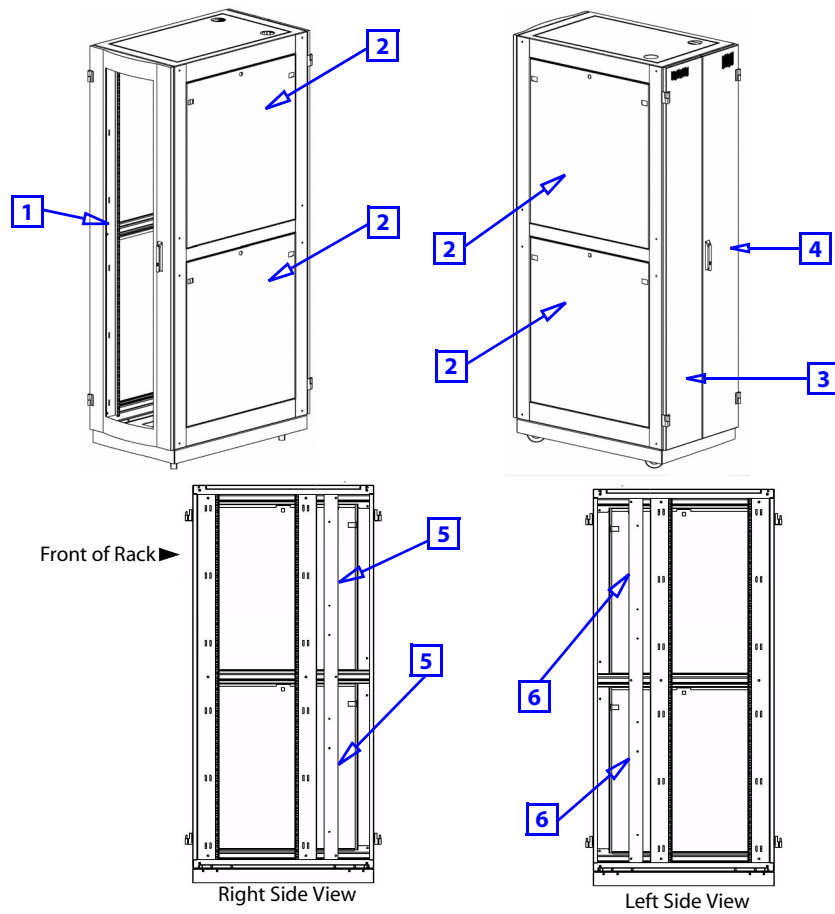
45U Wide Rack Specifications		
Height:		89" (2260.6mm)
Depth:	With front and rear doors installed	44" (1117.6mm)
	Less front and rear doors	42" (1066.8mm)
Width:	With side panels installed	28" (711.2mm)
Weight:	Empty rack	610 lbs (277.27 kg)
	Max. weight with ten 48-bay enclosures and controller couplet	2418 lbs (1099.09 kg)
	Max. weight with ten 48-bay enclosures only	2310 lbs (1050.0 kg)
	Max. weight with ten 60-bay enclosures and controller couplet	3090 lbs (1403.67 kg)
	Max. weight with ten 60-bay enclosures only	3010 lbs (1367.27 kg)

4.2 DCS9550 42U FRU Part Numbers



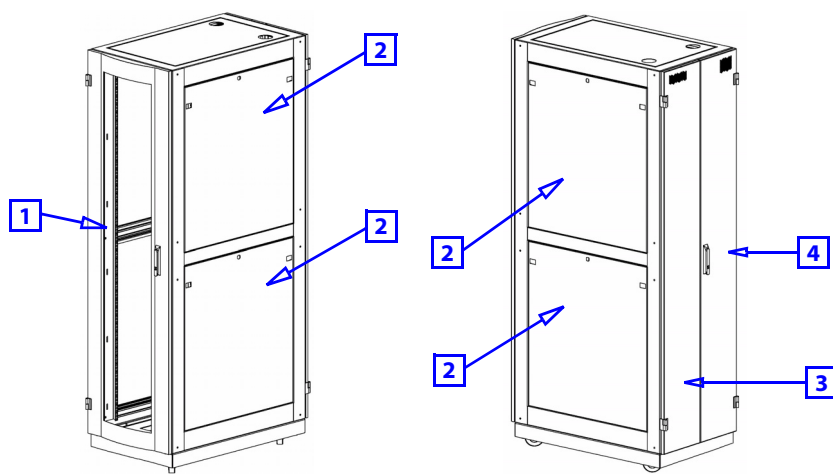
Item	FRU Part Number	Units per Assembly	Description
1	45E0992	1	Front door
2	45E1051	4	Side panel
3	45E1052	1	Left rear door
4	45E0993	1	Right rear door (with door handle)
5	95P6972	2	Right PDU 30A 220V with NEMA L6-30 15' power cord
	95P6973	2	Right PDU 30A or 250V IEC 309 Plug and 14-6" power cord
6	95P5362	2	Left PDU 30A 220V with NEMA L6-30 15' power cord
	95P5363	2	Left PDU 30A or 250V IEC 309 Plug and 14-6" power cord
	45E0806	1	Anti-tip plate kit
	95P5359		Baying kit
	45E0807		Door key
	95P6966		3U rack filler plate
	95P6967		2U rack filler plate

4.3 DCS9550 45U FRU Part Numbers



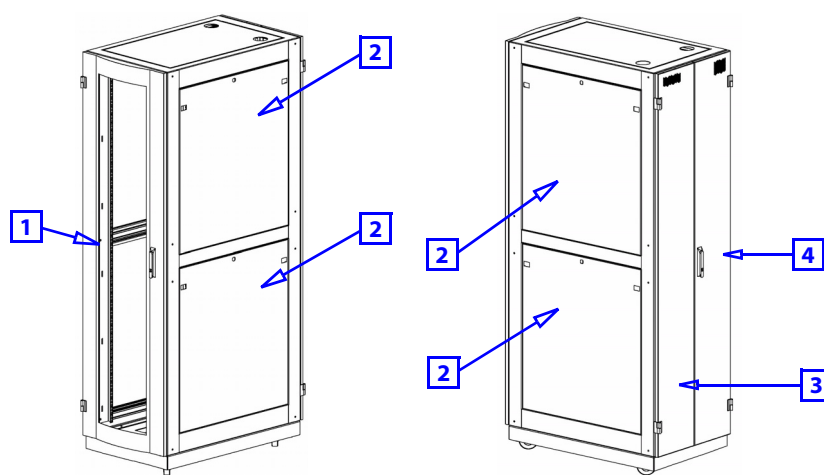
Item	FRU Part Number	Units per Assembly	Description
1	95P5360	1	Front door
2	45E0803	4	Side panel
3	45E0804	1	Left rear door
4	45E0805	1	Right rear door (with door handle)
5	95P6972	2	Right PDU 30A 220V with NEMA L6-30 15' power cord
	95P6973	2	Right PDU 30A or 250V IEC 309 Plug and 14-6" power cord
6	95P5362	2	Left PDU 30A 220V with NEMA L6-30 15' power cord
	95P5363	2	Left PDU 30A or 250V IEC 309 Plug and 14-6" power cord
	45E0806	1	Anti-tip plate kit
	95P5359		Baying kit
	45E0807		Door key
	95P6966		3U rack filler plate
	95P6967		2U rack filler plate

4.4 DCS9900 45U FRU Part Numbers



Item	FRU Part Number	Units per Assembly	Description
1	46M5895	1	Front door
2	45E0803	4	Side panel
3	45E0804	1	Left rear door
4	45E0805	1	Right rear door (with door handle)
	45E0806	1	Anti-tip plate kit
	95P5362	8	PDU 30A 220V with NEMA L6-30 15' power cord
	95P5363	8	PDU 30A or 250V IEC 309 Plug and 14-6" power cord
	46M5888	4	PDU mounting bracket
	45E0807		Door key

4.5 DCS9900 42U FRU Part Numbers



Item	FRU Part Number	Units per Assembly	Description
1	46M5892	1	Front door (for use with 28-inch wide 42U rack)
2	45E1051	4	Side panel (for use with 28-inch wide 42U rack)
3	45E1052	1	Left rear door (for use with 28-inch wide 42U rack)
4	45E0993	1	Right rear door (with door handle, for use with 28-inch wide 42U rack)
	95P5362	4	PDU 30A 220V with NEMA L6-30 15' power cord
	95P5363	4	PDU 30A or 250V IEC 309 Plug and 14-6" power cord
	45E0806	1	45U/42U anti-tip plate kit (same as 45U and for use with 28-inch wide 42U rack)
	95P5359	1	45U/42U rack bolt kit (same as 45U and for use with 28-inch wide 42U rack)
	45E0807	1	45U/42U Door key (same as 45U and for use with 28-inch wide 42U rack)
	95P6966		3U rack filler plate

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- Reported to the Carbon Disclosure Project for 5 years (since inception)

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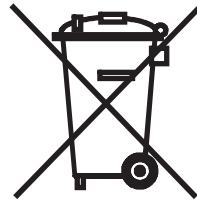
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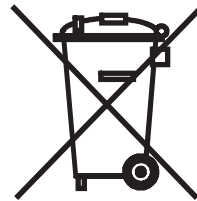
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Batteries or packaging for batteries are labeled in accordance with European Directive 2006/66/EC concerning batteries and accumulators and waste batteries and accumulators. The Directive determines the framework for the return and recycling of used batteries and accumulators as applicable throughout the European Union. This label is applied to various batteries to indicate that the battery is not to be thrown away, but rather reclaimed upon end of life per this Directive.

Les batteries ou emballages pour batteries sont étiquetés conformément aux directives européennes 2006/66/EC, norme relative aux batteries et accumulateurs en usage et aux batteries et accumulateurs usés. Les directives déterminent la marche à suivre en vigueur dans l'Union Européenne pour le retour et le recyclage des batteries et accumulateurs usés. Cette étiquette est appliquée sur diverses batteries pour indiquer que la batterie ne doit pas être mise au rebut mais plutôt récupérée en fin de cycle de vie selon cette norme.

バッテリーあるいはバッテリー用のパッケージには、EU 諸国に対する廃電気電子機器指令 2006/66/EC のラベルが貼られています。この指令は、バッテリーと蓄電池、および廃棄バッテリーと蓄電池に関するものです。この指令は、使用済みバッテリーと蓄電池の回収とリサイクルの骨子を定めているもので、EU 諸国にわたって適用されます。このラベルは、使用済みになったときに指令に従って適正な処理をする必要があることを知らせるために種々のバッテリーに貼られています。

In accordance with the European Directive 2006/66/EC, batteries and accumulators are labeled to indicate that they are to be collected separately and recycled at end of life. The label on the battery may also include a chemical symbol for the metal concerned in the battery (Pb for lead, Hg for mercury and Cd for cadmium). Users

of batteries and accumulators must not dispose of batteries and accumulators as unsorted municipal waste, but use the collection framework available to customers for the return, recycling and treatment of batteries and accumulators. Customer participation is important to minimize any potential effects of batteries and accumulators on the environment and human health due to the potential presence of hazardous substances. For proper collection and treatment, contact your local IBM representative.

This notice is provided in accordance with Royal Decree 106/2008 of Spain: The retail price of batteries, accumulators and power cells includes the cost of the environmental management of their waste.

Este aviso se proporciona de conformidad con, además de otros requisitos, el Real Decreto español 106/2008: El precio de venta al público de las baterías, los acumuladores y las celdas de potencia incluye el coste de la gestión de su desecho.

For California:

Perchlorate Material - special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate.

The foregoing notice is provided in accordance with California Code of Regulations Title 22, Division 4.5 Chapter 33. Best Management Practices for Perchlorate Materials. This product, part or both may include a lithium manganese dioxide battery which contains a perchlorate substance.

Readers' Comments — We'd Like to Hear from You

IBM System Storage
DCS9550 and DCS9900 42U and 45U Rack Installation and Configuration Guide

Publication No. SC23-6659-02

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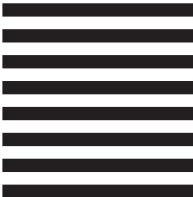
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